AMATEUR RADIO

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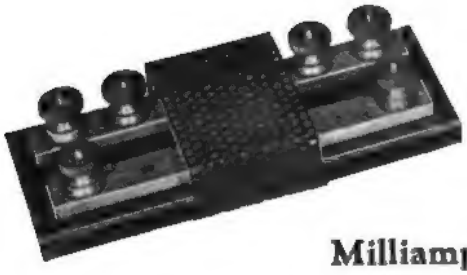

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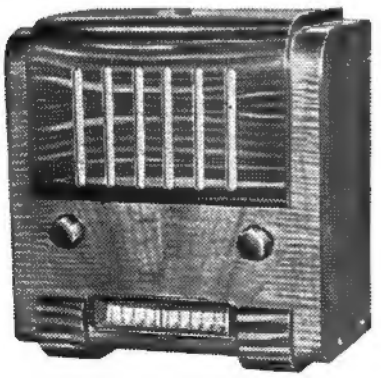

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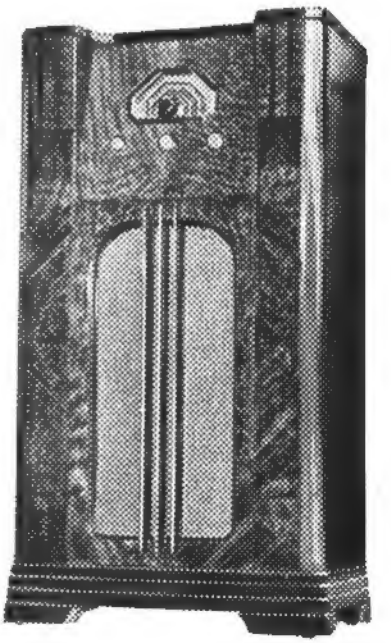

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EDITORIAL . .

One is often inclined to think rather dejectedly of the future of the Institute, when running up against the seeming brick walls which so often obstruct the progress of the amateur in general and the Institute in particular.

The one point that is often conveniently forgotten, or really in our own case just missed, is the fact that this Institute is carried on by its officers in an entirely honorary capacity, and, after all, the best of us must be forgiven if at some time we make the small slip that to some is the be-all and end-all of amateur radio.

The running of the Institute should not, and cannot, be at the present time the life work of any one member or members. Amateur radio is a hobby in the truest sense, and as long as it remains one, the arguments that seem inclined to run through the varied ranks should not be present.

One would be inclined to think, judging our hobby unbiassedly, that any arguments would be at least of a technical nature, but invariably they are political. The members of the Institute annually, in all Divisions, elect Councils to look after political things for them, and with them should be left this doubtful honour. There seems to be no better way to distort the truth in matters of controversy than to transmit it through various amateur channels, and the result would make the average politician promises gasp. The reflection is not on the amateur's honesty, but on his ability to add his own little rider on possibly a matter of which he knows little.

However, back to the Institute. A true example of the Institute's standing can be gathered from the success of the New South Wales Division's Amateur Exhibition. It is only just a year since they in New South Wales obtained the name Wireless Institute of Australia again, and during that year the progress has been remarkable. Without a doubt, the name W.I.A. is justly respected, and every amateur should be glad and proud to have the backing of the Institute, whose name in Australia, and for that matter in the world, means so much.

The progress of the Institute over the few years just past has been slow. World conditions have been unsteady. But the number of licensed amateurs is growing, and so with this growth the Institute should and will progress.

The general public are becoming more interested in the amateur every day. Dual wave sets are no longer a luxury, and as time passes we will play a bigger part in the eyes of the public.

The future of the Institute is assured. It is necessary for the amateur's well-being, and it is his unqualified duty in his spare moments to support and guide it in his future activity.

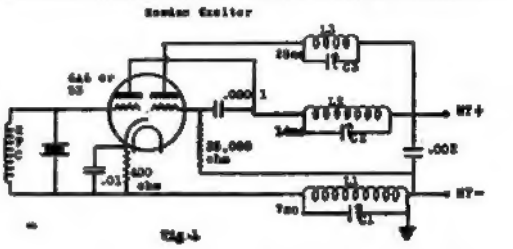
W. M. MOORE,
Federal President.

The Howden Exciter

Not satisfied with either the Tritet or the Jones' exciter as a frequency quadrupler, though the latter in particular gives every satisfaction as a doubler, some tests were carried out at 3BQ with a view to improving matters. In the first place, the old method of doubling in the C.O. by using two plate "tanks" was tried with the 6A6, and fair results were obtained. Then it was realised that greater harmonic output could be gained by using the fundamental circuit, L.C., in the negative lead, where it would be common to both plate supplies in this valve. Fig. 1 gives the arrangement, and its output is far in excess of that of the Jones' exciter.

At first glance it would appear that this circuit would put an abnormal strain on the crystal, but in practice it does not do so. With a 40-metre crystal, the R.F. in the actual crystal circuit is about 70 m.a., with 350 volts on the plate and 20-metre tank out of resonance, but this current drops right to about 40 m.a., which is a much more normal figure when the 20-metre tank circuit is tuned, so that there is little fear of frequency drift, let alone damage to the crystal. With this arrangement the output on 10 metres was practically equal to that of the 802 that normally follows the Jones' exciter. A few tests were carried out using a 30-metre crystal and tuning both the Cathode and plate-tank circuits of the first triod to the fundamental. Neither of these would quite reach the actual frequency, so it could not be ascertained for certain whether the crystal would stand up to the strain, but no damage was done with the crystal current up at about 120 m.a., and at that the output on 10 metres was sufficient to drive a 10. It is hoped that by next month the tests will have been carried out with 80 metre crystals for 20-metre output, where the circuit will be of use to a far greater number. In the meantime the circuit is quite safe to use with L2C2 tuned to the second harmonic.

The operation and tuning of this unit is very simple. However, as with exciters of a similar nature, one must not expect vast anode current dips when tuning to resonance. Here we have three tuned circuits with the common D.C. supply, and when one circuit is resonated it automatically supplies excitation to the following



Circuit Constants for Howden Exciter Unit.

L1.—7 m.c. Cathode coil, 15 turns of 16-gauge, 2-inch diameter.
L2.—14 m.c. plate coil, 10 turns of 16-gauge, 2-inch diameter.
L3.—28 m.c. plate coil, 4 turns of 16-gauge, 2-inch diameter.
Winding in each case is spaced one wire diameter.
C1, C2, C3.—11-15 plate midget condensers.
C4.—100 mm.f.d., mica fixed.
C5.—0.01 m.f.d. Cathode by - pass, fixed.
C6.—0.002 m.f.d. mica anode by-pass, fixed.
R.F.C.—Wound with 34-gauge D.S.C., 3 inches long and 3/8th diameter. Winding over full length.

stage, indicated by a rise in anode current. Thus the total current depends on the actual condition of each of the circuits.

Probably the best indication of output at any frequency is the good old pea lamp shorted across a turn of wire. The first circuit to be tuned is, of course, the crystal fundamental Cathode circuit. Roughly speaking, the anode current will rise from 15-20 milliamps to around 60, when the

(Continued on page 9.)

A 5 Watt Portable Outfit

By Ivan Hodder (VK3RH).

This portable outfit was designed originally for bush-fire co-operation work, and was to be operated by VK3HL and myself reporting back from the seat of a fire to VK3HM or VK3HQ, who, in turn, advised the local officer by telephone of the progress or otherwise of the blaze. In this way reinforcements could be ob-

tained when necessary, or volunteers could be stopped when the danger period was past, thus improving the efficiency of the brigade and cutting down "wild-goose chases" to a minimum.

The operating distance would never exceed 20 miles, and a very low-powered rig would have filled the bill, but as our danger period existed for only a few months each year, it was decided to build an outfit which would embrace "ham" uses as well. To that end plug-in coils were used in the transmitter and band switching in the receiver, and provision made for operation in the 20, 40 and 80-metre bands.

Recognising that stability of signal was of primary importance in a portable rig, where operating conditions are not always what could be desired, crystal control was adopted as essential. Then, in order to obtain efficient output upon the higher frequencies, a 38 tube, used as a tri-tet C.O., followed by a 42 as P.A., was decided upon. However, if I was about to build this rig again, I would undoubtedly take advantage of later-produced tubes and use a 6A6 as C.O.-doubler, followed by a 79 as P.A., with the elements in parallel. The latter tube wired in this manner will give greater output than a 42.

Fone is achieved by the Telefunken method, via an A415 tube and a Strom.-Carl. mike.

Instead of keeping the outfit in the flea-power class by using batteries for plate supply, it was decided to use a car radio "B" eliminator, and run it and the tube heaters from the 6-volt car battery. The topography of this district enables a car to go any place that a fire will, and so one of my problems was easily solved. But not so easy! All the rotary type eliminators were far too bulky to be built into the same case as the gear, and I was in a bit of a jamb until I came across the "Eclipse" "B" Eliminator. This is the dual vibrator type, and through the kind agency of VK3ZX one was specially fixed up for me. It takes up very little space, delivers 250 volts at 35 mills., and has never given a moment's trouble.

So much for the general design of the transmitter. I do not proposed to accompany my remarks with a circuit diagram, for this is quite conventional, and therefore known to all you fellows. However, the mechanical construction will probably interest most of you, and so I have taken photos. to illustrate this article. You will note that the carrying case is a "junk" job which may be picked up nowadays for a few "bob" at "Uncle's." Two stand-

off insulators are fitted on top to take the aerial and earth leads—although the latter is superfluous, as the car chassis is sufficiently good for the purpose.

The transmitter and power supply are built as a unit and occupies the upper storey, while underneath are the receiver and its plate supply, and on the lower right the key. This space also houses the mike and the power flex and plug, the latter being plugged into a socket on the instrument panel of the car.

Glancing at the front panel of the transmitter, the two vernier dials handle the .0001 m.f.d. C.O. and the P.A. tank tuning condensers. The knob on the lower left is responsible for the Cathode tank tuning, and the capacity is .0002 m.f.d. On the lower right is the band-changing switch, which is built on anti-capacity lines and merely throws a .00025 m.f.d. fixed condenser across the P.A. tank coil, thus permitting operation upon 40 and 80 metres with the same tank coil. Not so hot from the viewpoint of the high L/C fiend, but a Q5R5 signal at 200 miles in daylight, with the aerial 6 feet above ground, is sufficient answer to that. The D.P.D.T. switch in the centre of the panel in the up position throws the antenna on to the receiver and switches on the receiver filaments. When in the down position the antenna is thrown to the transmitter and the "B" eliminator is energised.

The left-hand "Yaxley" switch throws on the heater juice for the transmitter tubes, and the right-hand switch controls either C.W. or fone. It is a D.P.D.T. "Yaxley," and changes the P.A. grid-leak from a fixed value of 10,000 ohms to the Telefunken modulator tube, and also switches on the filament supply for this tube. A 4½-volt "C" battery is used for the purpose. The bias supply of 9 volts for the modulator is also located inside the case.

The two metres are below plate mills., and above R.F. output, and were incorporated as they happened to be on hand, the milliammeter being much the handier of the two.

The panel is of aluminium with a mottle finish, and this method of finishing the surface gives the outfit rather a distinguished appearance. At a later date I shall go into the matter of how best to obtain this effect.

Transferring now to the rear view of the transmitter, the C.O. and plug-in crystal holder will be seen at the right. Nearer the front panel is the shielded Cathode coil, and to its left the C.O. tank tuning condenser. At the rear of the sub-panel is the H.T. supply, and its dimensions show how this type of eliminator lends itself to portable construction. It is clamped into position by metal strips. Behind it may be seen the send-receive switch and modulator tube, while further to the left is the C.O. tank tuning condenser, tank coil and the 42 tube. The coil is of the plug-in type, to facilitate band changing. Since the neutralising capacity has to stay put, a compression type was used and found quite satisfactory.

Under the sub-panel are located the C.O. tank coil, switches, mike transformer, wiring, etc., and an illustration of these is hardly necessary.

The C.O. pulls 10 mills., and the P.A. about double this current, which indicates an input of around 5 watts.

At the moment the antenna is a voltage-fed affair 133 feet long, and as space did not permit a coupling coil to be employed, it is clipped direct to the P.A. tank. However, a matched impedance antenna circuit on the lines described in "R9" for January, 1935, is to be installed to keep my conscience clear so far as the "R1" is concerned.

Keying is effected in the Cathode of the P.A., and no difficulty was found in getting the outfit to perk in the beginning, and I, therefore, have no "snags" to comment upon.

So much for the goes-outer"—now for the "comes-inter."

This is a three-tube outfit, using the two-volt series—a B262, 30 and 22A. The R.F. tube is untuned, and is merely employed to decouple the detection tube from the voltage-fed aerial, thus avoiding "holes" in tuning. It is impedance coupled to the aerial, using an R.F. choke, thus reducing

(Continued on page 9.)

Some Practical Details on the 6P6

The 6P6 low-power Penthode recently marketed by the A.W. Valve Co. is of particular interest to "hams," and for some weeks I have been using this tube in different positions in a normal C.C. rig, and the results may be of use to some who wonder whether or not it will fill the bill in their case.

First of all, it functions exceedingly well as a C.O., and can be used with safety to the crystal in a straight Penthode circuit with all the voltage that the tube itself will stand. It is rated at 450 volts on the plate, with 200 on the screen. Most valves with such a rating will function even better when operated at about 600 volts with the screen limited to some 150 volts or so, but here was where I first found trouble. As soon as the 500-volt mark is passed a series of internal sparks are observed between the various elements. They do not appear to damage the tube at all, but one can be quite sure that, were they permitted to continue for any length of time, it would soon go west. The internal screening is fairly complete, so that if used as a tri-tet there is relatively little strain on the crystal. The best output from it as a C.O. was about 8 watts, with 15 watts input. This was with 500 volts on the plate, 30,000 ohm. screen-dropping resistor. 60 volts neg. on the control grid through a R.F. choke and 30 volts neg. on the suppressor.

It is designed primarily as a buffer tube, and naturally best fits in this position. The 802 was the forerunner in this position, and for high-power work still stands alone, as it continues quite normally with 800 volts on the plate, while the 6P6 at this voltage goes mad. For normal power work (up to 500 volts), however, they can be changed without noticeable difference, and the price makes the 6P6 a much better bet. When used as a buffer the 6P6 should be biased with about 100 volts. When 500 is put on the plate, though, with a screen-dropping resistor of higher than 20,000 ohms., it can safely be lowered to 60 volts.

Much the same can be said of it as regards its operation as a frequency doubler in a Penthode circuit. It is just as good as an 802 up to 500 volts, but for powers over that the safest plan is to tie the three grids together and use it as a Triode. This overcomes the sparking between them, though even then high bias must be used to prevent a breakdown. Several stations are employing them as power amplifiers for 'phone work on the higher bands with good effect, and the suppressor grid modulation behaves very well. However, on the ten and five-metre bands, trouble is likely to occur unless special precautions are taken to prevent feed-back. A by-pass condenser from the suppressor to the cathode of .0001 m.f.d. right at the valve socket and an R.F.C. in both leads from the modulation transformer at its terminals kept the R.F. out of the speech amplifier even on five metres. The tune is very easy to modulate on its suppressor, and a single 42 will be too much unless tied well back with the gain control.

Almost any valve will work as a buffer on the higher bands where the capacity of the neutralising condenser does not matter, but when a buffer is required on ten or five metres the 6P6

CONSTANTS FOR 6P6 TRANSMITTER.

R1.—50,000 ohm., 1 watt.
R2.—Depending on voltage used.
R3.—30,000 ohm., 5 watt.
R4.—20,000 ohm., 5 watt or higher.
R5.—Voltage divider across small eliminator.
C1.—100 mm.f.d.
C2.—100 mm.f.d.
C3.—0.1 m.f.d.
C4.—.002 m.f.d.
C5.—0.0001 m.f.d.
C6.—0.002 m.f.d.
C7.—2-4 m.f.d.
S.W.1 'Phone.—C.W. Switch.

comes into its own. With very haywire precautions against external inductive coupling, no trace of self-oscillation was noticed, though with higher power in stages where space is limited shielding will be found worth while. Very little drive is required to excite this tube, and it was found possible to get a couple of watts' output on five metres with it when it was driven as a final frequency doubler driven by a 6A6 and a 40-metre crystal. This was perhaps the hardest job it could be required to do, so it was not to be wondered at that it was hardly driven hard enough to permit of heavy modulation on this band.

Taken all in all, it seems to be about the most satisfactory valve that can be used for moderate power buffers and doublers, and though what I have said seems to concern its faults, it behaved so well in all other normal cases that I have taken them for granted.

(Continued on page 4.)

crystal jumps into oscillation. Tuning L2 will produce a slight dip in current when the second harmonic is approached, but immediately rising when properly in resonance. The same procedure is observed when tuning L3. In the end the total cathode current will be around 60-70 mills. with 350 volts input. It is recommended that link coupling be used to attach to the next stage.

(Continued on page 7.)

cross-modulation from B.C. stations, often experienced when resistance coupling is used.

The detector is coupled via the usual R.F. transformer method, but a slight change from convention is made by using the primary winding also as a reaction coil. The R.F. from the plate of the detector is fed through it via a fixed .0001 condenser, and reaction control is obtained by means of potentiometer control of the plate voltage. If you haven't already tried this stunt, I can certainly recommend it, as it behaves exactly like the convential three-coil arrangement, but saves space and time by eliminating the third coil. When using a screen-grid tube reaction is best obtained by varying the screen voltage.

Glancing at the receiver, the reaction control knob will be seen on the right. Beneath the tuning dial is the wave-change switch. The tuning capacity used gives a coverage of about 30 to 60 degrees on the different bands. The knob on the left throws the receiver over from the normal aerial to the loop aerial built into the lid of the case. This is of considerable advantage in the event of Q.R.M. from a near-by transmitter blocking the detector grid when using the long aerial. The enclosed aerial is used only as an open-ended loop, of course.

Plate voltage for the receiver is obtained from two 31.5-volt "C" batteries, and adequate enough to give really good signal strength on all VK and ZL stations, and W's trickle through at R5.

The possession of such a portable outfit opens up all sorts of avenues for interesting experiments and field days, in addition to providing for emergency purposes. In our particular case it has apparently had a very noticeable moral effect, for since the completion of the job there hasn't been a fire of any sort in the district!

To those of you who may decide to build an outfit along the same lines, I'll say, "Good fun!"

Floating Broadcaster

MISS EILEEN FOLEY, ANNOUNCER.

Miss Eileen Foley, radio announcer, of Station 9MI, on the McIlwraith, McEacharn liner "Kanimbla," starts upon her career as officer in charge of the first floating broadcaster with the assurance that she has already given pleasure to a vast audience of listeners throughout Australia, Great Britain, the Continent of Europe and the world at large.

Miss Foley broadcast from the "Kanimbla" while the vessel was in European waters. Reports showed that reception was excellent. Since her return to Australia she has received scores of letters from every State in the Commonwealth. This is the result, mainly, of the broadcast which was relayed through the National stations when the "Kanimbla" was a few hundred miles from Melbourne. All Miss Foley's correspondents state that reception was excellent, and that the programme radiated from the "Kanimbla" was excellently chosen and well produced.

Miss Foley was due to give a special broadcast from the "Kanimbla" when the ship was between Sydney and Melbourne on the evening of 11th June. This was to have been relayed through 3LO, Melbourne, during the children's session. The McIlwraith, McEacharn Co. has not decided at the moment of writing precisely how often broadcasts will be made from the ship, but Miss Foley herself has now had a broad experience in radio, which will assist the programme materially. She has visited Germany, and broadcast by invitation from the Rundfunkhaus, at Berlin, where the German National programme originates. She also made several broadcasts for the British Broadcasting Corporation in England. In Berlin she was impressed with a map of Australia, dotted with coloured pins, showing places all over the Commonwealth from which letters have been written notifying reception of Germany's long-distance broadcasts. The broadcasting equipment of the "Kanimbla" was designed and manufactured by Amalgamated Wireless (A'sia) Ltd.

Correspondence

Mt. Lawley, W.A.

(To the Editor.)

Sir,—Received reply to-day to my "ham" advertisement inserted in April "Amateur Radio," and would like to record my appreciation. Did not like to hope too much, as W.A. is a long step, but "Amateur Radio" came through. Show this to your advertisers! Many thanks.—Es 73.

D. GROGAN.

[This should bring in some "ham" advertisements, we hope.—Editor.]

Cowra.

(To the Editor.)

Sir,—Being covered with shame, arising from the reading of your May Editorial, although I am not qualified to write a large article, I enclose herewith a par. which may be of interest and of use to the fraternity, hoping that it will serve to shift a little of the opprobrium from the VK2 gang. Seriously, though, I do think that the journal is worthy of all the support that the "hams" in all States can give it, and I assure you that if anything comes under my notice which is worth making into a par. I will send it along. Wishing the journal every success.—Yours, etc.,

H. CARRUTHERS (VK2PF).

[Thanks! Your type of article is always welcome; also your cheering remarks.—Editor.]

Murraydale.

(To the Editor.)

Sir,—Many of us will hang our heads after reading your Editorial this month. Congratulations thereon, and may it bring the interstate response it deserves.

As technical articles don't pour in, might I suggest more station descriptions, with a careful description of any special gear, etc.? Such, to my mind, make interesting and useful reading. Most "hams" don't rush the limelight, but if dope cannot be obtained by fair means let foul be used. If the idea is of any use, I'll undertake to write up such station descriptions as are available.—Yours, etc.,

J. RICH. PHILLIPS.

[Thanks! We will be glad to receive descriptions.—Editor.]

"Sticky-Beaking" as an Introduction to the "Ham" Game

(By ZL-156.)

Some day I hope to build a radio transmitter and qualify for an amateur's licence to operate it.

In the meantime I am getting a whale of a lot of fun and improving my education no end by poking a nosey-parker "sticky-beak" into every nook and cranny of the ether.

From the angle of a listener's point of view, I am gradually learning to distinguish the finer points of amateur radio transmission. I think I must also be getting wise to some points that are not so fine. Hi!

One can sense the day, possibly not far off, when he will get drawn, willy-nilly, into something approaching a real obsession for the mechanical side of radio. One of the things I have already learned, however, is that transmitting efficiency and successful radio communication, both local and D.X., depends on something further than a well-designed and carefully-constructed rig.

During the past few months I have noted with surprise that fellows who have built up with the most meticulous care the very last word in radio rigs sometimes discount this very fine initial advantage quite heavily by a careless and at times slovenly, enunciation of their call, and by a disregard of the need for a positive identification of same.

In general, "sticky-beaking" has taught me that there is much more in this amateur radio transmitting than meets the casual eye, and it has definitely impressed me with the idea that, while the main interest of amateur transmitters is always likely to radiate round the "rig" (and quite rightly so), there is a real need to devote thought and attention to the art of transmitting technique.

The purpose of this chin-chin is to remind "hams" of a few things that they know ever so much better than I do, but which seem to get overlooked in spite of being so obvious.

The majority of "hams" announce the first letter of their call quite distinctly. Usually the second letter of the call gets a rough spin. The voice is dropped to a mumble and the second letter, well, takes pot luck, so to speak. "Hams" know, yet so often in practice forget, that when a letter is uttered carelessly and without further identification, it is often quite impossible, even in local communications, to distinguish B from C, D, E, G, P, T. or V.

It was interesting a week or two ago to hear a call from W6CNE. This "ham" gave his call very carefully and deliberately to start off with. Then he identified it by C, as in California; N, as in Nebraska; E, as in England. Not seeming to be satisfied with that, he added "Dar-di-dar-di, dar-di, di" (CNE in Morse sigs.). It greatly tickled me, but it was sound technique. Occasionally I hear a VK give his call in the usual way and then tap it out on the key. That also is good. Then some "hams" coin a distinctive identification mark of their own, such as the familiar ZL-1DC—"One Direct Current." Where that form of identification is adopted, care needs to be taken that words are chosen that can readily be picked up at a distance.

Now, the reproduction of speech by mechanical means call's for special speech technique. Very few folks realise that. How many, for instance, out of all the thousands who regularly use the ordinary telephone get 100 per cent. reproduction of their speech? Very few. Almost everybody, when they speak over the 'phone, as when they speak into a mike, sub-consciously raise the strength of their voice above normal, and in the same act also raise the pitch of the voice! And usually the

greater the distance one is trying to reach, the louder one is inclined to shout and the higher the pitch of the voice is raised. That's bad technique. It results, as often as not, in a confused jangle of sound.

My experience as a "sticky-beak" leads me very definitely to the conclusion that ordinary standards of elocution do not apply in radio, and particularly in D.X. radio. I find that the smaller one keeps his range of speech frequencies the better his speech is likely to get over. The narrower his fluctuations in strength or voice, the better the results. The smaller the variations in pace of speech, the better. A medium pace, a medium power, and the middle of the voice register, seem to suit radio transmission best.

I was very deeply interested in some argument that followed a recent "ham" contest in Auckland. It was hotly contended that the speech of the declared winner of the contest was monotonous, flacid and almost entirely lacking in warmth and vivacity, all of which criticism was reasonably fair. But those very factors helped to make what was unquestionably the most effective speech transmission in the contest.

Personally, I would be extremely sorry to hear anything in the nature of unnatural or affected speech. There is no occasion for any "ham" to ape an Oxford Don or an intoning church prelate. There is no occasion for any "ham" to sink his personality or try to smother the little personal idiosyncrasies that endear him to brother "hams." Not a bit. On the other hand, are we not wise if we try to keep clearly in mind that there are certain rules and laws by which the "ham" game seems to be irrevocably governed, and if we each, in his or her own peculiar, personal way, do our best to observe these, we may reach the highest and best the game has to offer?

One could say much more, but this has been a fair over, and I had better QRT. So take it away, boys. It's yours.

EXPERIMENTAL RADIO STATION, VK2WI.

Members of the Wireless Institute of Australia (N.S.W. Division), and especially country members, are reminded that their official station (VK2WI) has commenced a bi-weekly broadcast under the management of VK2BJ, and may be heard each Wednesday, commencing 1930 EST on 3,580 KC, and on Sundays at 1,100 on an approximate frequency of 7,160 KC.

If you would be posted as to the latest information concerning the activities of your Division, listen in for the latest news bulletins supplied by your publicity officer.

Reports on reception are desired, in order to obtain a reasonably accurate estimate of the value and effective coverage of these broadcasts as affecting members in particular. Will you please co-operate by addressing your reports to Experimental Radio Station VK2WI, Box 1734 JJ, G.P.O., Sydney?

Suggestions for extending this service to give the greatest possible benefit to country members are also invited and will receive due consideration by the Council.

We note that 7PA has given up writing the VK7 notes. He was one of the best correspondents. We'll miss him.

Thanks a lot, O.M., for your constant attention to duty. Sometimes you must have cursed the Magazine Committee, so we propose to take this opportunity to thank you and your successor (7JB), together with all other correspondents who do and keep doing their jobs.

We wish we could write you personally, but this month's Editorial conveys the position. We have a living to earn, like other people, and time is far too short.—73, Editor.

All copy must be in hand by the 18th of the month preceding publication.—Thanks! Editor.

Yes, 3RX; I Remember!

(By 7K2NO.)

The six-inch spark from a kite antenna that nearly scuppered me in 1911.

My rotary gap that could be heard better aurally than etherically.

When we used Sterling one-inch coils and unprotected gaps in 'planes during the Big Scrap.

When Melba sang from Chelmsford through my loose-coupler-galena-three-"note magnifier"-tin horn on 2,000 odd metres in 1920.

When Paul Godley came over to GB with a Grebe RX and logged Yanks "around 200." So did several G's with less pretentious gear!

The freezing, shivery, thrilling nights of the first Trans-Atlantics with tearing R.A.C. sigs. from F8AB, U1MO, U1XAM, C1DD, G2NM, G2KF, PCII, and others.

When Cecil Goyder (G2SZ) landed Frank Bell (Z4AA) and wouldn't believe he was a Maorilander until Frank cabled conformation.

The way A3BQ and A2CM used to romp into London on "Eighty-Five" in '24.

When Phil. Nolan burnt the ether trails with 2YI, and his call was a Mecca for Yanks.

The terrific racket from A2BK's "sink" and the despair of BCL's for miles around the Harbour.

Those 32-metre days, when QRM was unknown—almost!

When one had to coax the gang from 32 to "twenty."

The all-day D.X. with Europe around "twenty" in 1926-7.

The way A2DY put it all over us on "twenty" with his lone 201 "A" against our T250's in parallel.

When I could draw 200MA from the neighbour's fowl fence with the key pressed.

When Navy personnel came over to a "ham" station to find out why a handful of watts could reach Europe and 10 KW couldn't.

The affair at Wyndham, W.A., when a "ham" station saved the Commonwealth a pile of cash in a protracted search for a lost 'plane.

The time the op. on H.M.A.S. —— asked OA2 to telephone a Navy station and say they couldn't hear 'em in the Solomons. The subsequent TFC through the said "ham" and the court-martial the op. nearly went through.

A thousand and one pleasant memories of "ham" radio. The "young squirts" that have come and gone, and those that have stayed. I may be getting into the old-timer category, but I have the good sense to stick to this finest of all games. It's never devoid of thrills and is yet only an infant.

28 M.C. Notes

(From VK4.)

During the past few weeks most 10-metre stations in all continents have complained of poor conditions.

The equinox periods are undoubtedly the best for 10-metre communication over all distances.

Mid-winter and mid-summer conditions are such that signals are audible over comparatively small areas at continually varying distances from the transmitter. Signals from medium distances are most consistent, and those travelling north and south are audible for the longest periods. This means that VK signals are lobbing either in mid-ocean or in sparsely-populated districts.

Conditions prevailing at present have caused most stations to reduce activity; consequently operators get discouraged and use the band at weekends only for short periods.

Ten metres is one of the bands where stations should keep on the air as much as possible, in preference to listening. At times, when one station commences with a CQ, it is the signal for others hearing him to do likewise; whereas, if nothing is heard, the operators either switch off their receivers, and in some cases say the band is dead, or tune to a lower frequency.

VK stations using beam antennae are still working a few W's and J's, but other continents are rarely heard. During June all continents except, perhaps, Africa were contacted, which is much more than could be done in June last year, and, no doubt, is due to the increase in the number of efficient stations active on ten.

PAOAPX, who requires only VK for WAC 10, advises that he is listening every Sunday 0800 to 1000 GMT, using a sensitive receiver.

Europeans and Northern Africans should be at their peak during October, and VK stations are urged to try and contact as many as possible, in preference to working U.S.A. stations only.

High power is not necessary, but a suitable antenna is desirable.

The multiwave horizontal Hertz is directional, and will give good radiation in four directions at small angles from the line of the antenna. Following are a few stations who have successfully contacted VK's on 28 M.C., using medium inputs:—G5BP (10 watts), VU2AU (6 w.), J3CR (10 w.), ZL3CU (7 w.), F8CNP (12 w.), OH7NC (20 w.), VU2BL (10 w.). Most of the Europeans worked use between 25 and 100 watts input.
by distance.
R.A.C. sigs. from F8AB, U1MO, C1DD, G2NM, G2KF, PCII, and others.

The rather doubtful contact the long way round between W8CMP and VK4EI, which was reported last year, turned out to be the above-mentioned F8CNP, who was using 12 watts input to a self-excited rig.

Our representative called at the sign of The A. H. Gibson (Electrical) Co. Pty. Ltd., 23 Hardware-street, Melbourne, during the month, and had the pleasure of meeting Mr. Seabridge, head of the radio department. The firm are agents for the Paton Electrical Instrument Co. of Ashfield, Sydney. This concern manufactures a wide range of radio and electrical testing instruments, meters, dials, voltmeters, generators, and all the other gadgets dear to the heart of the Ham. Further issues of "Amateur Radio" will give particulars.

In our June issue appeared an advertisement from Radio Ltd., of Los Angeles, U.S.A., quoting a special price for a subscription to "Radio," and a copy of the "Radio Handbook," and referring local readers to McGill's Agency, of Melbourne. The latter firm desire us to state that the prices quoted in the advertisement cannot apply to local conditions, the suggestion in the advertisement in question of a "current equivalent" implying rate of exchange, which brings the price to that charged by McGill's in the ordinary way. Readers may rely as usual on getting full value and service at McGill's.

Federal and Victorian Q.S.L. Bureau

By VK3RJ (Federal QSL Manager).

Copies of the new Melbourne metropolitan traffic code are available on application to this bureau.

Melbourne "hams" were again pleased to meet and renew acquaintance with Roger Greene (VR1AM), of Ocean Island. Roger and Mrs. Greene spent their furlough in their native land, and report all well. With A.C. now on tap, Roger plans increased activity on his return to Ocean Island.

Roumanian short - wave amateurs have founded their national society, styled the "AARUS." All amateurs of that country are members, and the chief office - bearers are:—President, YR5AS (Dr. Savopol); Secretary, YR5EV (M. Niculesco). The QSL manager is M. Cantuniari (YR5VC), whose QRA is: Str Matei Basarab, No. 3, Bis Bucharest IV, Roumania.

The station signing VK3PI and giving fictitious addresses in Melbourne suburbs is a pirate. The real VK3PI (Mr. L. Pearson) only secured his ticket a few weeks ago, and has not yet commenced activity. When he starts up, Mr. Pearson's fist will distinguish him from the bogus station.

Cards are on hand at the bureau, 23 Landale-street, Box Hill, for the following VK3's:—3AC, AD, AN, AP, BH, BL, BS, CA, DS, EF, ER, ES, FB, FM, FN, FQ, GB, GF, GJ, GM, GX, GW, GY, HN, HY, JA, KV, LS, LY, MK, NG, NT, OI, PC, PH, PS, QJ, RE, RM, RW, TW, UJ, WD, WH, WZ, XA, ZB, ZK, ZL, ZW, Messrs. Dynan, Hampton, Peters, Grimwood, Nye.

"Matelot" Gordon Macleod, ex-VK3ZZ, and more recently VK2RU, is back again in Victoria, and is now VK3ZZ again. Gordon, who is in the "King's Navee," is active and is located at Crib Point.

VK3 STAGES A 56 M.C. FIELD DAY.

Sunday, 7th June, the date picked for the big open air event, opened up in the most pessimistic way possible, in that it looked like a wash-out for the participants as far as the weather was concerned. However, having got the word "go" from 3XL on 200 metres, the gangs set forth to the predetermined localities. Those who entered into the spirit of the day in the bush were:—VK3DH, MR, KQ, UK, UH, OF, HF, ML, YP, and those who worked from the "fireside" were VK3BQ, PL, TH, WY, HK, CR, RS.

Sites chosen ranged from 10 to 50 miles from VIM, scattered in all directions. The balloons, or rather aerials, strode forth into the atmosphere around 11 a.m. Right from the start the band seemed loaded with signals, and it was some time before certain stations established contact owing to the QRM. The majority of signals were reported R6-8 all the day, and under QRM-free conditions all stations on the air could quite easily have worked one another. It follows without saying that the day was a huge success. The next field day will require stations to go away on the Saturday night, so that they can get far enough apart by Sunday morning.

The contest that was run in conjunction with the event was probably won by 3KQ, who certainly put out a fat signal from Macedon. Until the next key punchers' meeting nobody will know who actually won, but KQ contacted 3QF at Arthur's Seat. 3ML, at Kinglake East, worked the same station, but was beaten for the record by a few miles. 3DH, at Frankston, was also heard at Kinglake, and it is worth noting that DH used flea power and a quarter-wave aerial on the chassis of the car, with the frame acting as the other half of the dipole. Power supplies ranged from motor generators, vibrator units to "B" batteries. 3ML used 240 volts of "Diamond" heavy-duty "B's," which stood up very well against the strain of some 50 milliamps average drain current. This form of supply was essential owing to the Class "B" modulation system employed. The

(Continued on cover 3.)

Divisional Notes

Divisional Addresses:-

FEDERAL HEADQUARTERS .. .. BOX 2127L, G.P.O., SYDNEY
NEW SOUTH WALES .. .. BOX 1734JJ, G.P.O., SYDNEY
VICTORIA .. .. BOX 2611W, G.P.O., MELBOURNE
QUEENSLAND .. .. BOX 1524V, G.P.O., BRISBANE
SOUTH AUSTRALIA .. .. BOX 284D, G.P.O., ADELAIDE
WEST AUSTRALIA .. .. 62 SUBIACO ROAD, SUBIACO
TASMANIA .. .. BOX 547E, G.P.O., HOBART

N.S.W. Division

W. G. Ryan, Secretary, VK2TI, Box 1734JJ, G.P.O., Sydney.

COUNTRY ZONE OFFICERS.

ZONE 1 (Far West)—
J. Perous, VK2PE, Hope Street, Bourke.

ZONE 2 (North-West)—
H. Hutton, VK2HV, Byron Street, Inverell.

ZONE 3 (North Coast)—
R. J. Berry, VK2NY, 54 Bacon Street, Carlton.

ZONE 4 (Hunter River and Coalfields)—
S. Grimmett, VK2ZW, 161 Tudor Street, Hamilton.

ZONE 5 (South Coast and South-West)—
R. Ross. VK2IG, 673 David Street, Albury.

ZONE 2 (2HV).

2WQ.—Not much time for D.X., so ragchews on 40 over week-ends. Crystal mike, speech amp. 57, 56. 2A5 and pair of 2A5's Class AB as modulators. 47 C.O. on 7007 K.C., 46 buffer, doubler and 210 P.A. take care of the R.F. Bob is a newcomer to Werris Creek and is late of Manly. RX6 tube super.

2NF.—Has left Werris Creek, and is now QRL at Eveleigh. So long, Jack, and the best of D.X. at your new QRA!

2RV.—Has nice superhet. RX 56, 57, Q58, 58, 2B7, 59, 59, 523. Whew! With an 11-inch dynamic speaker. This certainly sounds ft. 47, C.O. 46 fd., and parallel 46 in P.A. With 300 volts on all stages put nicer sigs. into KA, J, etc. Frequency, 7,236 K.C. Name, Son. Nice chap, too. 2ZP seems to be preparing for the long winter sleep, and is—as usual—QRT. Rig is still Hartley 210, and the second of is still the cause of the inactivity.

2UR, 2WT, 2JF.—All seem to be QRT.

2ON.—First of Lindsay sec. of Bob AF3 EC ox., 59 buffer doubler, 46 P.A. P.M.G. mike, 227 sp. amp., 45 series modulator. Voltage-fed Hertz antenna input, 2½ watts. Spends most time on 80 and 20 M.X.

Toddy, of Tamworth, has not been down on 40 or 20, so must be on 80 or QRT.

2KO, of Temora, turned out to be Jack Early, the well-known second of old 2CR.

2XD, also of Tamworth, has been heard on 40 M.X., with FB TA calling CQ, D.X. What luck, Ken.? No news of 2GU or 2DD to hand this month.

2ZX.—Makes witty (?) remarks on the B.C. band, and grinds out nice (?) recordings. Spare time, if any, is spent on 40.

2HC/BE, 2KN, 2KR and 2XQ.—All seem to be on 80, as no signs heard on the higher frequencies.

2HV.—25 Watts, C.C., 7,001 K.C. Spends most time on 20 metres D.X.-ing, with occasionally regchews on 40 fone. 47 CO 46, 46, 210, 210, 210 P.A. All six stages are used on both bands. Half-way Zepp. and several types of matched impedance antenna are used. Double - choke Heising modulation, with pair of 250's Hal. mike; 57, 56, 56 speech amp. 2X's tube super and two-tube EC, 58, 56, W.A.C. Thirty-six countries. Now you know as much about 2HV as I do myself, and that doesn't say much. Hi!

ZONE NOTES.—VK2IG.

Conditions generally on all bands have undergone rather complete changes. D.X. on 40H, and nil on

20 M.X. excepting few W's during the afternoons. At night on 20 no sigs. heard at all, but plenty of WJ, X, etc., on 40 until the early hours of the a.m. Ten metres also not T0 hot. The boys here all been visiting each other. That's the fb "ham" spirit, O.M's.!

OJ.—Been to Sydney and visited AP, where with old YI (Harry) he heard his own station! 1G and Herb. Marshall, ops. at OJ's, and very fb gx on fone on 40 X.

QE.—QRL work, and not heard of very much.

QD.—Unlucky to have back attack of mumps, but getting better again. Now FB, O.B.!

VK.—QSO-ing more YL's than D.X. Hi! Kept poor IG out of bed trying to get D.X. one evening.

IG.—Not on so often. Shack's too darn cold. Shack is a couple of walls minus. Hi!

I hear old ZLIDV is very sick. The gang here hopes he will soon be O.K. and on the air again. Good luck, O.M.

ZONE NOTES FOR NORTH COAST.

ZONE 3.

Well, boys, here's the first notes from new Z.O. (VK2NY).

Conditions on all bands appear to be changing.

80 M.X. very quiet except for few VK's and 2 L's.

40 M.X. also quiet; at night the little D.X. to be heard. 2NY recently heard W3 at 9.30 a.m. Still plenty of W fones on 20, with W6ITH predominating.

2NY still living in hopes of hearing and working European for 10 M.X. W.A.C., though hasn't been on 10 for a month.

Now some dope on the gang:—

2CJ.—Gets out well with his 67-feet vent ant. Recently got R7 report on his.

40 M.X.—Fine for W5 F.B. 2AO rebuilding, and hopes to be on soon with C.C.

2GM (late of Grafton, now of Bankstown).—Also rebuilding. Has new Phelps' ant., which he says is the goods.

22M.—Recently QSO'd 2CW, 8.30 p.m.-3 a.m. Some QSO! He has also been on 20 M.X., and got R9 for IKE. of W9RUK.

2NY.—Off the air rebuilding, but working night and day to get back on. Hi!

Believe 2QI got spliced. F.B. and congratulations! Keith, hope to hear you on the air now.

252.—Still continues to ragchew on 80 M.X. when local "B" Class station QRM permits.

Nothing has been heard of the other Richmond River boys. The OT (Frank Kimpton) has been bitten again, and will be on with three-letter call.

Guess that's all for now. So 73 to all.

NORTH SHORE ZONE.

2AE very quiet during the past few months; Dave must be building something special. 2ACJ is a new Ham in Artarmon, Mr. George Rutter, and his rig, to begin with, is a '59 in electron-coupled ckt, the QRI being a nice T9 Xtal note. His next door neighbour, Mr. George Fenton, expects to receive his call within a week, so there should be plenty of QSO's between these two. 2BJ conducts the official broadcasts from W.I.A.'s station, VK2WI, every Wednesday night on 80 m. from 7.30 p.m. and every Sunday on 40 m. at 11 a.m.

2DR has an ideal YL second op., who is very interested in the technical and building side of Ham radio. Don also has a few watt-hour meters for sale at 1/- a time; these contain a handy gadget that could be used for counting turns. 2FV makes contact now and again; still listening for your fone, Jack. 2HA has procured a bug key to improve his fist (?). Ned's lil 2nd op. caused his signal to modulate 500 per cent. the other night when Ned decided that she had chewed enough paint off the corner of his receiver.

2HG has a YL announcer who sounds fairly proficient. 2HL wants all the North Shore boys to get interested in 5 mx. 2HY still heard on 20 occasionally. 2HZ still QRL preparing for the Exhibition. Guess its success will not be due to Bill's lack of support! 2LD contacts the Yanks on 40 with ease. 2LZ has some good gear for the Exhibition. W6AHZ, speaking from W6FQY, was asking after 2LZ, and would be pleased to QSO him on 20 again.

2NN has improved his fone and gets his pup Peter to bark CQ for him. 2NV has not yet oiled up his P.A., although he has the modulators perking well. 2PV has been QRL with Uni. study, but finds some time to work some DX once in a while. 2QF had portable fone working from Newport

and put out some good stuff. 2SS is still on self excited and apparently finds it better than Xtal. 2SV again heard on fone from Roseville. 2VE not been on for some time except from 2AJC, when heard working 2VN in Mosman. 2VN's harmonic can be heard on 20 unless he is down there in person. 2VP apparently has not yet found a cure for his clix. 2YA puts speed on his QSO's by using a bug key.

NORTH SUBURBAN RADIO CLUB.

The above club is now in regular working order and anticipates extending its activities in the near future. Our thanks are due to the willing workers who have made this possible, especially to VK2HL, VG, GD, NN, VE and BJ.

Although scarcely in existence three months, we have already made our mark in the competitive field, with three cups to the credit of our members. We take this opportunity of thanking Zero Beat for providing the opportunity.

Our constitution has been ratified, and applications for membership in one of three grades, viz., full, ordinary and associate, are now invited, and may be addressed to temporary headquarters, 1 Bowan Street, Chatswood.

Full membership is open only to licensed amateurs resident on the North Shore who are prepared to acept responsibility and service; ordinary membership to those licensed amateurs who, unable to assume responsibility, are prepared to part with the princely sum of 10/- per annum, payable quarterly; and associate membership to short wave enthusiasts who desire assistance towards qualifying for elevation to Ham rank and are prepared to contribute an annual fee of 5/-, plus initial registration of 2/6, towards the cost of accommodation essential to this service.

LAKEMBA RADIO CLUB—VK2LR.
(Affiliated with W.I.A.)

(By 2DL.)

The outstanding event of the month was the Amateur Radio Exhibition organised by the W.I.A., at which the above club occupied a stall. Exhibits of interest entered by club members included a large rack and panel transmitter by 2OW, condenser microphones by 2CY and 2XM, 5-metre transmitter and receiver by 2EH and 2OD, a "bug" by 2PX, also a 1920 model receiver used by Harold in "the good old days," together with various other apparatus of interest. The back of the stall was decorated with a map of the world surrounded by QSL cards from various countries, with the club's call sign directly above in large, glittering, silver letters. The cards created a great deal of interest, as most of them were selected, including one from the Graf Zepplin (QSOed by 2PX), and one from FM8IH! It is understood that the latter is regarded as a very rare specimen! The official opening by Mr. F. E. Hardy, from America, was an outstanding success, and indications are that future exhibitions will be even better.

NEWCASTLE CLUB—2RF.
(Affiliated with W.I.A.)

Congratulations to "Dave" Davies, who is now 2BZ. The locals all hope to QSO often, Dave, and wish you the best of luck. A 2-stage e.c. rig. is the first transmitter.

UF going in for Class B modn. Must be getting ready to blow KB off the air at the latter's new and adjacent QRA. Incidentally Allan is still in U.S.A. and having an fb time by all reports.

FN will be on the air at his new QRA at Orange, having at last found a shack. The gang look forward a lot to chewing the rag with Geoff again.

OE getting out fb. to W and VE on 40 mx. using a single 45 TNT.

The quarterly DX test for the Electronic Communications Cup is on again, and half way through RF is leading MT, with UF in third place. Despite the winter condx. some good dx. has been worked by the competitors, including VE, X, PJ, FS8, FA8, U, OZ and VS1.

Eight associate members are being prepared for their tickets, and are all enthusiastic, so it should not be long before the local QRM gets a bit thicker.

The P. and L. Wireless Supplies Pty. Ltd. are now comfortably installed in their new establishment a few doors further along Hardware-street. The shop, workshop and window are spacious and well equipped, and Hams can even more than before rely on service. Mr. Aarons is on the job continually; Mr. Johns is on a business tour of Europe in search of fresh inspirations.

Victorian Division

PHONE SECTION NOTES.

(By VK3DH).

The Phone Section meeting for May was held at the Institute rooms on the last Tuesday, 25th of the month, as usual. Present were XL, BY, SB, RI, OY, PG, HF, EL, JR, OV, FL, KE, JB, GK, FW, HK, PA, LM, GY, TM, TH, DH, and Messrs. Kerley, Lahiff, O. Davies and 3JQ from Geelong.

Some months ago 3OV gave notice of motion that he intended to attempt to have changed the motion on the books which said that the Allocations Committee be composed of members not actively engaged in transmissions on the 200 mx. band. Owing to the cutting out of all general business on the meeting night following this notice (the day of the death of His Majesty King George V.), somehow this had been forgotten. However, OV again brought up the question on May 26th, and when the motion was put to the meeting, it was carried.

Later SB moved and OY seconded that the Allocations Committee be composed of four members. Nominations were Messrs. Kerley, Lahiff, O. Davies, 3BY, FW, RI, JB, TH and AM, so the question to be decided at the June meeting is which quartette of this party will form the new year's Allocations Committtee,

The usual business of the meeting for May was proceded with and allocations fixed according to order of merit, which system has proved very effective, since nobody has anyone but themselves to blame if they don't receive the allocation desired.

3HF reports that after running marathon transmissions for four consecutive week-ends, Harry and Graham are feeling rather tired, and have decided to suspend the all-night stunt for a while. I might explain that they started at 0000 Sunday and continued until 1000 hours. This, for most people who are likely to listen at these un-

earthly hours, really means all of Saturday night.

3FW contemplates the installation of a couple of "beam" tubes as modulators, the output of which combination is rated at 60 watts of audio frequency power with .6 per cent. total distortion (?) in class A.B.1. I expect Bill will not need any power input to the modulated amplifier at all then—he will be able to use rectified A.F. voltage instead.

3RI are having a considerable amount of fun with "long lines" in their studio equipment, we heard.

3LM is experimenting with a ribbon microphone. (It was explained to us by a certain broadcast engineer that this is a "species of velocity microphone.") Some of the boys will readily remember this.

A suggestion was received from the Key Section that, should we have any trouble with our crystals not being sufficiently active, we should try those obtainable in small boxes labelled, "Worth a guinea a box!" If you do not know this story, read "Amateur Radio" for June—again!

We heard 3OY using a dynamic microphone which performs excellently, considering that it was originally designed for use at the other end of the amplifier.

3FL has been putting on some very good programmes lately. Good work, O.M.! (Copyright 3OF.)

A number of the good and loyal phone gang exercised their lungs at the 5-metre field day on Sunday last (June 7th), and all voted it an F.B. day.

3TH got himself into trouble by using up a large slice of the 4,000 k.c. available, when he played "canned music" to the chaps "on location."

Note the Ten Commandments for 5-metre stations.—(1) On no account play canned music on a field day. (2 to 10, inclusive) Don't use that antiquated expression "Hi!"

NOTES FROM U.H.F. SECTION.

(By VK3DH.)

The formation of this section really took place on Tuesday, May 19th. However, since a new section had at that time not officially been recognised by the Council, all work and decisions were just of a tentative nature. Among those present on this occasion were DD, JO, VH, KQ, LK, UR, CR, HZ, PL, TH, DH, Messrs. Joubert, J. Davies, O. Davies and VH, Junr.

Tentative nominations for office-bearers were.—Chairman, CR, TH, Mr. O. Davies; secretary, DH; technical advisers, KQ, DH. Of the above, TH was elected as chairman; secretary, DH; technical advisers, KQ, DH.

Another meeting of the U.H.F. Section was held on Tuesday, June 16th. (Ask TH how to pronounce U.H.F.!) Present at the second meeting were VH, KQ, HF, CR, JZ, XK, VX, HZ, JO, PW, JJ, OF, QR, TH, DH, Messrs. J. Davies, O. Davies, Kneale, Stan King, Denys Ayres, Colin Harvey and VH, Junr.

General business included the booking of 3KQ (Mr. Gilbert Miles) for a lecture-demonstration on 56 m.c. receivers and all their angles. This will definitely be something you should not miss—KQ is the "5-metre super het. king." July 21st is the occasion of the next meeting of the U.H.F. "fiends," when KQ will be heard.

On Sunday, June 7, a quite successful 5-metre field day was held. We have to thank 3ZC (Mr. Tutton), 3TH (Mr. G. F. Thompson), and the secretary of the Key Section, 3YO (Mr. Woodwood) for their work in organising the details in connection with portable permits, locations, and times of transmission, and also a competition. First prize is to go to the station which scores the highest total mileage, counting the distance from any station to the one being contacted, and taking into consideration only the first QSO. There is also to be a contest for the greatest number of contacts for the day—from 1100 hours to 1600 hours.

Well, now, how the day went! All those who took part whom I have met since voted the day an F.B. one, and they mostly ask when the next one will take place. The weather did not appear very promising on the Saturday evening of that week-end, as rain was falling till fairly late. However, on Sunday morning the prospect of a fine day was heralded by a frosty morning.

A number of the "portables" came on the air quite a while before 11.00 a.m. 3KQ, 3VH and VH, Jr., were on the job somewhere about 10.00 a.m., I believe, so they must have started with the lark.

In most cases the various parties kept their "skeds" with the locations as per arrangement. Portable gear in use, in most cases, comprised super-regenerative receivers and motor-

generator or vibrator-powered transmitters from accumulators.

KQ, UK and DH were exceptions in the receiver line, as superheterodynes were employed, but transmitters were the usual modulated oscillator type + single-button microphone and audio oscillator for code.

Powers ranged from 25 watts to 2.3 watts input for the portable stations, and, in the cases of UR, BQ, WY, CR, TH and DD, who operated from their home locations, powers were of a generally higher value.

From remarks passed by a number of the operators it seems generally accepted that power input is about one of the least important factors in work under "field day" conditions, where locations of transmitters are almost ideal.

The general opinion is that we might concentrate more on directive antennas for future experiments.

On the competition side of the day, 3RS, located at Shepparton, was a much-sought-after "catch," but nobody succeeded, although several parties state that they heard RS.

The longest contact for the day (as far as I know, since the logs have not been checked) was from 3KQ-3VH, located at Macedon, to 3OF at Arthur's Seat, Dromana. This contact was quite satisfactory in every way—good sigs. at both ends; but, contrary to the usually accepted theory, 3KQ-VH used a current-fed vertical antenna (2 half waves in phase + reflectors), and 3OF used a plain dipole strung horizontally. Incidently the signals at our location (3JO-DH Frankston) from 3OF were very weak, yet at the same instant sigs. at KQ-VH from OF were strong; also that of DH at KQ-VH was R 6-7. There were probably a number of other cases similar to this about which someone else can enlighten us. One of the points that struck us very noticeably at Frankston was the general high sig. level of nearly all stations heard—of 21 heard 20 were over R5.

Well, here's to the next time!

SHORT WAVE GROUP NOTES.

Due to pressure of personal business, the Secretary has not been able to write up the Section Notes of late.

Our past President has just recovered from a serious operation, and the new scribe joins with the gang in wishing him the best of health.

Now for some back dates.

March 11.—3XJ gave an interesting address on audio amplifiers (pne and main). This was followed by a working bee which repaired all broken furniture. (All sections pse note.)

March 25.—Mr. Davies gave a lecturette on measuring instruments and their kindred uses.

April 8.—3JO gave the gang some pointers on the construction of 56 m.c. RX's.

April 22.—Produced Institute history. 56 m.c. sigs. from 3DH were heard in the Institute rooms per 3JO's RX's.

May 13.—Mr. Davies gave a short talk on 56 m.c. antenna and construction of same.

May 27.—Mr. Ayne brought in his 56 m.c. RX, which was promptly aligned and adjusted by 3JO.

June 7.—Our esteemed Chairman, 3JO, accompanied by Mr. Davies, joined 3DH at Frankston for the field day, and succeeded in working five stations, including a DX QSO of 65 miles with 3KQ at Mt. Macedon.

June 10.—Further Institute history. 3WI on 5 metres. 3JO brought in his field day gear and, calling 3WI, worked 3DH and 3PL. 3OF and 3VH also reported sigs. R7-8 QSA5. But the RX in use could not raise these latter two.

Well, gang, this brings the notes right up to the minute. If this display of progress in the Group doesn't stir yr blood then u r dead. O.K., boys, bring along yr friends to our next meeting and be in the fun.

NORTHERN DISTRICT NOTES.

(By 3KR and 3TL.)

New ops at key—ari, new scribes taking up pen.

3OR has his new mansion at Lake Meran nearly finished. Vy fb, too. Rig at present haywire during operations. Expect another rig when he moves into new shack. What with looking after ba-bas and building, Murray vy QRL, but manages to get on air occasionally.

3KI grows fb oranges at Lake Boga. Ask any visiting Ham! John is close to township and has AC supply. Puts out a hefty sig. wid his RK20.

3ZK (Zebra King) sells collars, ties, and the like in his spare time. Don't hr Jimmy much on 80 nw. He is wkg DX fone on 40 and 20. Used to boast he possessed champion haywire rig, but we believe he has tidied it up a bit. Sez he once built a neat rack and panel Xmtr, but the blessed thing re-

fused to work, so he wrecked it and reverted to haywire.

3CE (Roy), after toiling all day preparing fer cropping Mallee farm at Berriwillock when it rains, plays round wid a new 6A6 CO, and gets a lot of fun wkg DX on 20.

3NN (Herb) vy QRL growing wheat and wool at Yanac, but his fb 80 m. fone can usually be hrd on Sunday mornings.

3HX (Tom) is putting out a nice fone sig frm his shack at Charlton nw.

3MK (Tubby) is the op at 3MA Broadcasting Stn at Mildura. When not too QRL his fb fone sigs can be picked up on 80 or 40.

3PX is a new Ham. Harry plays round wid a portable frm a camp 22 miles frm Mildura during week-ends.

3WN lives at Sea Lake. John's fb 80 m. fone can be hrd on Sunday mornings when he wks the Northern gang.

3HL and 3HM (Allan and Mrs. Hutchings) hv a large station at Callawadda. They both put in spare time wkg 10 m. DX.

3KR sells the Kerang public BC Rxs during the day, operates the talkies 2 or 3 nights a week, but finds time to work the world on 20 and 10. Has WAC fone and WAC 10, and is now after WAC 10 fone. Ken has 2 Xmtrs. One he keeps on 80 fer local ragchews. He powers his rig wid a DC jenny from the town supply.

3TL, also QRA Kerang, makes wills, defends Hams and others pinched by speed cops, or wl put u under the Farmers' Debts Adjustment Act. Has a fb multi-stage rig which puts out wicked fone and CW sigs on all bands. Power obtained frm overloaded rotary converter. Has made WAC in vy short period and is nw chasing WAC fone.

WESTERN DISTRICT NOTES.

(By 3OW.)

Power supply problems have lately been occupying the attention of 3OW and 3HG, due to the ageing of the engines driving the battery charging generators. At the former the trouble has been overcome by coupling the generator to the 4 h.p. farm engine in place of the smaller engine used previously. 3HG has an automobile engine, with which he intends driving a larger generator, when this has been obtained. He is finding it hard to keep his batteries charged at present, and, like the writer, spends little time on the air.

Most of the VK's seem to have forsaken the 3.5 m.c. band, which, although patchy, is quite workable. A 3.5 m.c. report from Europe was recently received by 3HG.

3PG has again had his aerial wrecked by the wind, and has not been heard for some weeks. Put up a steel mast, om!

The only event by 3OW worth mentioning for the month was putting phone over to a Yank on 20 m.c.—for the first time.

3JE is still in the district, but is now stationed at Casterton.

Queensland Division

Nothing of a momentous nature has happened in VK4 since the last notes were supplied. The Division's affairs generally, council meetings, T.D.S. and student sections are all running smoothly.

Quite a number of VK4's have received their W.I.A. membership certificates, and judging by the remarks passed, most of the certificates will be framed and displayed in the shacks where they belong.

The last general meeting was well attended and proved to be one of the liveliest held for some time. A motion moved by 4GK terminated in a special meeting being called of all VK4 transmitting men to discuss the unity and organisation of transmitting amateurs in Queensland. As the meeting is for all VK4's, and not W.I.A. members alone, a big attendance is expected.

The latter portion of the evening was devoted to an instructive lecture on the design of "superhets" for amateur use by Mr. J. Heine, VK4JX. Interest was added to the lecture by the fact that 4JX was able to demonstrate salient features of design on his own RX which he brought along.

At the next general meeting it is hoped that members will have the functioning and uses of a modern oscillograph demonstrated to them by a member of Messrs. J. B. Chandler and Co.

GENERAL HAM DOINGS.

On general ham doings this month there is little to report. Inactivity is in evidence at most shacks. The only really active ones seem to be 4HR, 4JX and 4UR. The last-named has invested in a new power transformer

and added another stage to his Xtal rig. Jack's investment has yielded returns in the form of more DX and better R reports.

Over 150 QSO's with the W's on 20 m.x. fone in three weeks gives an idea of the rate at which 4JX is working the "Yanks" with his new fone rig. (He did the same in VK3 and put us all to shame.—Editor.)

4HR is still confining his activities to 20 m.x. "Herr Schultz" and D4 sound familiar.

4AP is learning to play bridge whilst waiting for VK2LZ to get his 56 m.c. CW rig on the go. Alf has his "super" going on "five," but is dubious about the sensitivity due to the low noise level at a noisy QRA.

4EI is still conspicuous by his absence on 14 and 7 m.c. What about some news, Roy, om?

It looks as if very little will be heard of 4BB until the Fisk Trophy Contest.

Superhet receivers are gradually coming into favour in VK4. 4KH has built three in the last three months. 4HR, 4GK, 4VJ, 4ER and 4AP are all using "supers" and find results satisfactory.

4JU has worked over 40 prefixes on 14 m.c. in the last few months.

33,000 volt lines debar 4FB from hearing any DX, and for that reason Fred's doing are confined mostly to fone.

4EL, the QRP record-breaker, is on the job again. Eric is now in VIB and up to his old tricks with a 45 on a TNT.

A Xtal gate filter looks like being the latest addition to 4GK's RX. Contest men, please note!

4AW is eagerly awaiting the next 56 m.c. field day to try out his new high-power motor generator.

Our traffic officer, 4WT, is still stale for want of work. What about some news for these notes via 4WT, country members?

4LE is perplexed. Every EC oscillator George builds refuses to function. Expert assistance would be appreciated.

4OL and 4UL don't find much time to get on the air. Institute duties keep both busy.

4HA, 4FE, 4RG, 4DB, 4BS, 4FN and 4WA keep 7 m.c. lively with their fone QSO's.

4VJ has built up one of Jimmy Lamb's noise-silencer units.

Both 4RY and 4JB have worked new prefixes during the last few weeks.

Of country members' doings there is nothing to relate. The blame is on the heads of the country members themselves. Break the silence, om's. Pass the dope on via our traffic officer, 4WT. You'll find Bill on 7 m.c. on Monday, Wednesday and Friday evenings from 8 p.m. till 10 p.m.

South Australian Division

(By VK5KL.)

Two very fine lectures have been presented in the last month. On May 20th Mr. Manuel's (5RT) subject was "Crystal Filters as Applied to S.S. Superhets," and on May 27th Mr. Barbier (5MD) gave an account of his holiday to Sydney, via Melbourne, and back. Both these lectures were much appreciated by all attending the meetings. Mr. Heath (5ZX) has got together a large band of workers who are watching the 40-metre band, recording all commercial stations operating there in readiness for the Cairo Convention. The students' section this year is being catered for more than before, and in the capable hands of Mr. Gill White the lectures are progressing very well.

HAM CHATTER.

On Saturday, 30th May, Ivor Stafford (3XB) and 3AH took Adelaide by storm and arrived in town to sit for the second-class exam. The only regret is that I missed the chance of meeting both, as they had been waiting for about two hours and had just left when I arrived home. Trust both you chaps were impressed by the gear in the shack.

Another interstate visitor is Gordon Kempton (2CI), who is at present in via. Gordon has great ideas on antennas, and also DX on 5 metres. Obtained an 860 while at VK6MO. Also saw a 100-watt permit he has obtained. Whew!

Condx are quiet in VK5 and rebuilding is the order of the day.

5WJ on 20 m.x. fone. Hrd W6ITH QSO him. Kept R6 also 5RT es 5MZ audible at W6ITH.

5CR hrd on 40 m.x. fone at nite. Experiencing QRM frm 5DC tho.

5BD QSO'ed an ON just before midnite on 40. FB wrk, Don.

5LL has uses for bed-railing. Take a look at his antenna pole and see for yourself.

5ZC back on 20 m.x. Gess 10 m.x. has gone quiet.

5MV getting out well on 40 m.x. fone.

5RE puts a FB sig. into via, also 5IV on 50. Ron Dennell (5IV) will be visiting via soon.

5SU QRL Air Force skeds. Malcom and myself, accompanied by YL's, attended Miss Radio party. Arrived home 2.30 a.m. What a nite! Wow!

5GP has to QRT during B.C.L. hrs. Puts abt a amp. into the crystal set next door. Hi!

The Jones' supers are becoming popular. Gess the chaps will need them in the Oct. DX contest.

VK2 talk abt putting sanctions on VK3. By all accounts VK2 have a chap who has a stronger claim for the title of "Hay Wire King," than that of a chap in VK5. No, boys, I won't mention names. Let the cap fit.

Western Australian Division

(Per Radio VK3ML.)

The annual general meeting was held on 11th June, and the following were elected for Council for the 1936-7 period: — VK6CB, VK6CX, VK6FG, VK6RL, VK6JG, VK6WS, VK6GM, VK6WH, VK6KO and VK6MW. Outlining the year's activities, the President, VK6CB, revealed success in all branches of the organisation. Membership, finance, students' classes and social activities were treated. The cup for the highest average points during field days was won by VK6BB. At the annual dinner the cup presented by the West Australian Newspapers for the best all-round performance for the year will be presented. The winner will remain unknown until the night of the dinner, but VK6SA will receive an award.

A local contest is in progress, the pride for which is one year of QST, donated by 2CC. Conditions include a power limit of 10 watts and use of 7 m.c. band only. VK6CP looks like heading the list so far.

14 m.c. has been pretty good lately until darkness falls. 7 m.c. is punk. 3.5 m.c. is fair, but the usual winter gang on this frequency has not got going yet. Commercial interference on 7 m.c. is getting deplorable, and if the offenders were using the international morse code we might be able to identify them.

This Division decided to abandon official support of our only magazine link with other Divisions, and the above notes have been compiled unofficially and forwarded by a ham who realises the difficulties of and the stupendous work put in by the magazine committee to keep "Amateur Radio" going and who appreciates all that has been done by this committee.

The W.I.A. (West Australian Division) dinner took place in the Stirling Institute, Perth, on June 18th, and proved a huge success, with an attendance of 43, including the senior radio inspector, Mr. George Scott. One YL, namely, Ruth, provided excellent music when required. The proceedings opened with a great dinner, followed by a talkie show, and then a competition of oscillator building, which 6SA won in six and a half minutes, which is reckoned to be a record. Presentation of cups, which were won by 6BB and 6SA, followed amidst great acclamation. The proceedings were so enjoyable that time was not noticed until some of the gang had to run to catch the last trams at 2330 hours!

Tasmanian Division

(By 7PA.)

This Division has just completed another financial year, and the 11th annual general meeting and dinner were held on Saturday, June 6th, when a good muster of members made the functions a success, a number of Northern members attending. The year just ended has been reasonably successful, although a considerable loss was experienced in writing off bad debts amounting to nearly £20, when a number of names were removed from the register as unfinancial. This matter and others will be dealt with in full later, as a full report, it is hoped, will be prepared for this magazine at an early date.

Certain members have been at variance with the Division for some time past, and this came to a head at the end of the year by the receipt of four resignations from old members.

There is every hope of seeing a much improved condition during the next year. The Executive has a programme in hand which is expected to go a long way towards boosting things up. The personnel of the Executive

will be substantially the same for the ensuing year.

I have very little to offer this month in the way of jottings, as things here are pretty quiet at present. 20 metres in daytime is fair at times, but it, and 40 metres, too, are very quiet on most occasions after early evening. No early morning listening has been done here for some weeks, but nothing very exciting was heard when tried. The weather is against it, too—the temperature gets too low these early a.m.'s! It is proposed to have a listen again soon and risk freezing.

After somewhere in the vicinity of two years contributing these notes, my first issue being the report of the annual dinner, 1934, and having to scratch round for something to make reading on most occasions, with few hurts or growls, fortunately, I hope to be relieved of the responsibility from this issue, as I feel I am due for a spell. I have endeavoured at all times to occupy our space to the best advantage, and to the interest of all with what was available, and I wish my successor, who I believe is to be 7JB, an energetic and active, to say nothing of being a well-known member, the best of luck, and ask members to be more generous with information suitable for this column in the future. There should be plenty to be had if sufficient co-operation could be induced. Au revoir!

(See note elsewhere.—Editor.)

NOTES FOR VK7.

(By 7JB.)

The annual general meeting of the Tasmanian Division of the W.I.A. was held in the club rooms on 6th June. A fair gathering of members, including 7BQ, 7LZ, 7AB, 7CJ and 7RK from the North, were present. After the business and election of officers was concluded the gathering retired to the Ship Hotel for the annual dinner. For the first time in the history of VK7 two lady members (Miss J. I. Crowder, VK7YL, and Miss M. Cantrell) were present at the dinner. The Council for 1936-37 consists of Messrs. W. T. Hooker (7JH), president; H. M. Moorhouse, hon. secretary; A. E. Allen (7PA), J. C. Batchler (7JB), D. Fisher (7AB), N. Gillham, C. Johnston (7AR), F. Medhurst (7AH), C. Parish (7CP) and K. Valentine (7KV).

MEMBERS' ACTIVITIES.

Ladies first! 7YL started with two-stage Xtal rig (53-245). QSO several VK's and a W, but high-power bug biting, so rebuilding to a three-stage, using 53-46-210 P.A., also PP 2A3's Husing modulation. Say, Joy, was that your foto in the "Women's Realm" with all the pretties? Hi!

7KV stuck on 28 m.c. Only needs Europe for W.A.C. on 10. Fb, Keith. Will be first W.A.C. 28 m.c. if successful in landing one. 7JB needs South America, Europe and Africa, being next in the running, hi!

7HJ working quite a few W's and VE's in between times. Shift work and Tech. classes make consistent operation impossible.

7PA also getting a fair share of the DX. Worked a CM the other day. A bit lower, Peter, for S. America and W.A.C.

Wonders never cease! 7NC is on the air again. Ya don't sa! Five-stage Xtal with 210's and watts all over the place. Managed to blow one 210 with only 1200 volts on the poor thing. Can't understand it, Nev, om! Hi!

7CL, a new ham in Hobart, tried electron-coupled rig, but the note was a bit too rough, so changed to three-stage Xtal with much better results.

7JB potters around with 20-metre fone. Plenty of Yanks and W.A.C. fone twice. Didn't know there were so many B.C.L.'s in America (also neighbourhood).

7AB seems to be amongst the DX, judging by cards coming thru the bureau. Forwarded W.A.C. cards for approval by Council. Fb, Doug, om.

7LZ doing some fine DX with QRP rig on 7 and 14 m.c.

7RK working a few Yanks to break the monotony of VK's es ZL's. Sa, Ron (7RC), make your last dot a little more pronounced, as 7RK is receiving quite a lot of D.E. cards lately, hi!

7BQ amuses the B.C.L.'s in Launceston with canned music on 200 metres. Seems to be interested in 10 metres lately. Thinking abt giving it a try, Len?

7AM dreaming of 852's, hi! Challenged 7JB to a speed test with motor bikes. (Nuthin doin, sez I.)

Where, oh, where is 7RC these days? Hrd it was a YL. Missed u in the A.R.R.L. Test, Ron.

7XL also very quiet. Don't say power QRM has got you, George.

R.A.A.F. Wireless Reserve Notes

Officer Commanding: Flying Officer R. H. Cunningham, 397 High Street, Glen Iris, S.E.6, Victoria (VK3ML).

District Commanders—

Second District, N.S.W.—A. G. Henry, Clareville Avenue, Sandringham (VK2ZK).

Third District, Victoria—Pilot Officer V. E. Marshall, 3 Myrtle Avenue, Kew (VK3UK).

Fourth District, Queensland—A. E. Walz, Sandgate Road, Nundah (VK4AW).

Fifth District, South Australia—F. M. Gray, 52 Ormond Grove, Toorak Gardens (VK5SU).

Sixth District, West Australia—S. J. Madden, Dundas Road, Maylands (VK6MN).

Seventh District, Tasmania—R. Cannon, Goldie Street, Wynyard (VK7RC).

FEDERAL NOTES.

Membership of the Reserve has been steadily increasing of late, and in some districts it will be necessary to demand special qualifications of applicants, as the number undergoing training will be more than a District Commander can handle. The appointment of qualified instructors in R.A.A.F. procedure has greatly facilitated the District Commanders, and permits them to attend to the administrative and organisation sides with less worry on the mind.

Instead of staging a contest this year, as contests really prove nothing as to a members' ability, it is proposed to organise an efficiency test under service conditions. It should prove very interesting, as members will be grouped into various types of squadrons, such as seaplane, bomber, fighter and reconnaissance, each with its own special duty. The type of traffic will be consistent with the duty of the squadron on "active" service. It should give members an insight into what work they would have to perform in cases of national emergency.

The Reserve Bulletin, which is issued to members quarterly, has been delayed this period owing to excessive work in the Department, but should be posted before these notes are read. To "hams" outside the Reserve this Bulletin is one containing articles on procedure and all matters pertaining to Reserve training, as well as many pages of interesting material on the functions and operations of an Air Force, etc. It helps to bind the members together, with one common idea and line of thought. Amateurs keen on operating and desirous of offering loyal support to their country will find much of interest in the R.A.A.F. Reserve.

(6th DISTRICT).

The adoption of the 7635 KC channel for daylight work has been a success, and consequently attendances of watches have improved. The presence of the two Wapiti aircraft in this district has not increased activities so far. The "Flying Doctor Station," at Port Hedland, is being used by the operator with the aircraft for communication and contact direct with the East. Conditions render interstate traffic handling very trying, but 5A2 is a sticker and supplies the missing link. 6A1 was reluctantly transferred to an inactive section owing to certain duties preventing watch keeping. 6A2 holds the highest percentage of watches attended. 6A3 has been very consistent. 6A4 is struggling to get a new rig going. 6A5 is also rebuilding and moving to a new area. 6A6 is also consistent. 6B1 had his aerial blown down twice during a gale. Two further applications have been received, whilst two more are expected next week.

3rd DISTRICT NOTES.
(By VK3UK-3ZI.)

The first leg of the reorganisation scheme is now in successful operation with the starting up of regular work in the new Training Section. 3C3 has taken over the job of in-

structor, and is making a wonderful job of it. The Section is equipped with its crystals and is fully manned. In fact, we have the pleasure to relate that stations are banking up waiting for a vacancy in the Training Section to occur. As soon as the period of training has been covered by the present members of the Section they will be transferred to our main Section and another six will take their place.

We have to welcome prospective new members—VK3CE, Berriwillock; VK3WN, Sea Lake; VK3PX, Mildura; VK3JM, Fitzroy; and the return to our active ranks of VK3NY.

3BI is back in Melbourne again, and will be back on the job before the end of the month. During his journeying through Victoria he has gained a number of new members for VMC. That is the spirit that makes us so proud of our "Show." A member's first thought is always of how he can help his district. The last trip made by a Reserve man in Victoria was by 3A6, and he, too, was responsible for new members. The enthusiasm that is theirs and is held by all members is infectious, and soon pervades the new members also.

3B2 was very active during the recent 56 M.C. field day. Keith and 3D3 were going to Donna Buang, but a last-minute transport hitch forced them to work from home.

3C4 has his "sticks" erected at the new home, and will shortly be back on the air again.

3C5 has been experimenting with various antennae with a view to finding the one most suited to his location.

3C6 has done a great job in connection with the field day. He was, unfortunately, unable to take part himself.

3D4, from reports, will soon be installed in his new home.

3D5 has been experimenting with click filters.

3F1 puts a husky signal into Melbourne on schedules.

3F2 has a fist that sounds like "tape." It is a treat to hear him and 3F9 handling their traffic.

3F3 had the misfortune to blow his TB 04/10 P.A. tube just prior to his first Reserve schedule. He is replacing it with an 801.

3F4 and 3F5 are having trouble curing BCL QRM.

(Continued on page 16.)

Class "A" Heising and Class BC grid modulator oscillators favoured by some of the portable stations used one of the other forms.

Two stations, 3UK and 3ML, report hearing 3RS at Shepparton. However, 3RS tried all day to hear one of us without success. A contact over this distance would have certainly made the record in VK3.

Details of the gear used by the various stations are not to hand, but from reports the average station employed about 200 volts into some sort of push-pull oscillator, either with resonant tubes or coil and condenser combinations. Power doesn't seem to be of great importance on field days as long as what-one-has is put into the aerial. The most consistent signals appear to have come from stations using matched impedance and array aerials.

This account is very scratchy and incomplete, but space is the main item to be considered, so we will keep it till the next field day, when you can come along and see for yourself. That will probably be in August next.

[See U.H.F. Section notes for further VK3 activities.—Editor.]

Elsum Printing Coy., Box Hill and Melbourne.